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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,310	01/09/2002	Atsushi Ito	217374US2PCT	7395

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

LANEAU, RONALD

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/019,310

Applicant(s)

ITO ET AL.

Examiner

Ronald Laneau

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it should be limited to a single paragraph. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Sasaki et al (US 6,281,863).

As per claims 1, and 7, AAPA discloses a display panel wherein each display cell is connected to the common electrode and the discrete electrode, the discrete electrode is driven for each display cell and the common electrode is driven in common to plural cells, and display pulses are applied to the common electrode and the application of a positive control voltage by the discrete electrode is controlled for each cell to provide a display, the display pulse of the common electrode and the control voltage of the discrete electrode are produced for each unit panel and provided to each display cell (page 3, lines 16-24). Fig. 19, shows the relationship between the voltage of the common electrode and the discharge in the initialization sequence depicted in fig. 18, the left-hand side is the common electrode and the right-hand side the discrete electrode, the display pulse is formed by a two-step voltage, which increases and

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decreases in stages, the absolute value of the voltage of a reset pulse may preferably be set above the first-stage voltage value of the display pulse and with such a display pulse, it is possible to cause two discharges, i.e. a charge storage discharge and a stored charge removal discharge, by one shot of the display pulse (page 4, lines 10-20). Fig. 18, which is prior art, shows the step of supplying said common electrode with a reset pulse opposite in polarity to said display pulse for the inversion of charges stored on the said electrode. The AAPA does not disclose a single-step pulse as claimed Sasaki et al teach supplying a first full writing pulse to the common electrode at the back plate side and for supplying a second full writing pulse whose polarity is opposite to the first full writing pulse to the independent electrode at the back plate side for enabling a discharge between the electrodes in the full writing period (col. 2, lines 8-14).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the single pulse writing to the common electrodes because it would provide a display panel driving system in which discharging between electrodes at a back plate side is performed during the full writing and therefore improve the contrast of the display panel (col. 1, lines 47-53).

As per claim 2, it is well known in the art to utilize successive supply of pulse and it would have been obvious to one of ordinary skill in the art at the time the invention was made to supply successively said common electrode with a single-step pulse having the same polarity as claimed for the same reasons given in claim 1.

As per claim 3, AAPA discloses in fig. 18 a reset pulse wherein the width is equal to or smaller than 5 μ s as claimed.

As per claims 4-6 and 9, AAPA discloses a display panel wherein each display cell is connected to the common electrode and the discrete electrode, the discrete electrode is driven for each display cell and the common electrode is driven in common to plural cells, and display pulses are applied to the common electrode and the application of a positive control voltage by the discrete electrode is controlled for each cell to provide a display, the display pulse of the common electrode and the control voltage of the discrete electrode are produced for each unit panel and provided to each display cell (page 3, lines 16-24). AAPA further discloses that positive rise-up timing of the discrete electrode control voltage stops the discharge and the rise-up timing of the discrete electrode control voltage is controlled by the 8-bit data in 256 steps. Fig. 19, shows the relationship between the voltage of the common electrode and the discharge in the initialization sequence depicted in fig. 18, the left-hand side is the common electrode and the right-hand side the discrete electrode, the display pulse is formed by a two-step voltage, which increases and decreases in stages, the absolute value of the voltage of a reset pulse may preferably be set above the first-stage voltage value of the display pulse and with such a display pulse, it is possible to cause two discharges, i.e. a charge storage discharge and a stored charge removal discharge, by one shot of the display pulse (page 4, lines 4-20). Furthermore, AAPA disclose at times the voltages of both electrodes are 0 V meaning no voltage is applied to the electrodes and no discharge occurs as a result (page 4, line 27 to page 5, line12). Fig. 18, which is prior art, shows the step of supplying said common electrode with a reset pulse opposite in polarity to said display pulse for the inversion of charges stored on the said electrode. The AAPA does not expressly disclose that the second-step pulse rises within $1\mu\text{s}$ after the rise of its first-step pulse but it's well known in the art to utilize different specifications for the rising-up of

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the second-step pulse because it would allow discharge to occur and at the same time improve the brightness of the display. The AAPA does not disclose a single-step pulse as claimed Sasaki et al teach supplying a first full writing pulse to the common electrode at the back plate side and for supplying a second full writing pulse whose polarity is opposite to the first full writing pulse to the independent electrode at the back plate side for enabling a discharge between the electrodes in the full writing period (col. 2, lines 8-14).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the single pulse writing to the common electrodes because it would provide a display panel driving system in which discharging between electrodes at a back plate side is performed during the full writing and therefore improve the contrast of the display panel (col. 1, lines 47-53).

4. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As per claim 8, a display panel driving method wherein a stabilization period in which not to apply voltages to both of the common electrode and the discrete electrode is set between the sequences (a) and (b), or between the sequences (b) and (c).

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


- Kanazawa (US 5,446,344)

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Ronald Laneau
Examiner
Art Unit 2674

rl
December 26, 2003



RICHARD HJERPE
SUPERVISORY EXAMINER
TECHNOLOGY CENTER 2300

- Ito et al (US 6,483,249)
- Kanazawa et al (US 6,169,527)
- Shigeta (US 5,483,252)
- Tokunaga (US 5,982,344)
- Hirakawa et al (US 6,054,970)

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Laneau whose telephone number is 703-305-3973. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:00 PM or via email: ronald.laneau@uspto.gov.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached at 703-305-4709.

7. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.